

①

$$c + b = 600$$

 $c = \text{cookies}$
 $b = \text{brownies}$

$$c = 600 - b$$

$$0.35c + 0.75b = 360$$

$$0.35(600 - b) + 0.75b = 360$$

$$210 - 0.35b + 0.75b = 360$$

$$210 + 0.40b = 360$$

$$-210$$

$$-210$$

$$\frac{0.40b = 150}{0.40 \quad 0.40}$$

$$b = 375$$

375 brownies

$$c = 600 - b$$

$$c = 600 - 375$$

225 cookies

②

Quick Cam

$$y = \underline{5 + 0.99x}$$

Fun Photo

$$y = 3.50 + 1.05x$$

$$\begin{array}{rcl} 5 + 0.99x & = & 3.50 + 1.05x \\ - 0.99x & & - 0.99x \end{array}$$

$$\begin{array}{rcl} 5 & = & 3.50 + 0.06x \\ - 3.50 & - & 3.50 \end{array}$$

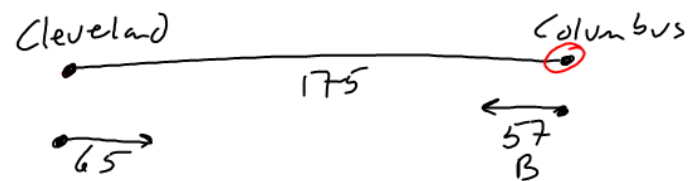
$$\frac{1.50}{0.06} = \frac{0.06x}{0.06}$$

$$\boxed{x = 25} \text{ \# prints}$$

$$y = 0.99(25) + 5$$

$$\boxed{y = 29.75} \text{ cost}$$

(3)



$$B = 57x + 0$$

$$M = 65x + 175$$

$$57x + 0 = 65x + 175$$

$$+65x \quad +65x$$

$$122x = 175$$

$$\frac{122x}{122} = \frac{175}{122}$$

$$x = 1.4 \text{ hours}$$

until they meet

→ dist. from Columbus is Bobby's distance

$$B = 57x \quad B = 57(1.4)$$

$$B = 79.8$$

If total distance is 175 miles and they are 79.8 mi from Columbus, then they are $175 - 79.8$ miles from Cleveland or 95.2 miles

- The times will be the same for both people.

4) Solve the system of equations by using substitution. Be sure to verify your solution by substituting it into one of the original equations.

a)
$$\begin{cases} y = 2x + 6 \\ y = 4x \end{cases}$$

$$\begin{array}{r} 2x + 6 = 4x \\ -2x \quad -2x \\ \hline 6 = 2x \\ \boxed{x = 3} \end{array}$$

$$\begin{array}{l} y = 4x \\ y = 4(3) \\ \boxed{y = 12} \end{array}$$

b)
$$\begin{cases} 2x + y = 19 \\ x - y = 2 \end{cases}$$

$$x = 2 + y$$

$$2x + y = 19$$

$$2(2 + y) + y = 19$$

$$4 + 2y + y = 19$$

$$\begin{array}{r} 4 + 2y = 19 \\ -4 \quad -4 \\ \hline \end{array}$$

$$\begin{array}{r} 2y = 15 \\ \boxed{y = 5} \end{array}$$

$$x = 2 + y$$

$$x = 2 + 5$$

$$\boxed{x = 7}$$

5) Solve the system of equation by using elimination. Be sure to verify your solution by substituting it into one of the original equations.

a) $\begin{cases} 5x + 3y = 26 \\ 2x - y = 6 \end{cases} \rightarrow \begin{cases} 5x + 3y = 26 \\ 6x - 3y = 18 \end{cases}$ add them

$$\frac{11x}{11} = \frac{44}{11} \quad \boxed{x = 4}$$

~~2x + 3y = 18~~
~~2x + 3y = 18~~

~~2x + 3y = 18~~
~~2(4) - y = 6~~
~~8 - y = 6~~

~~$\boxed{y = 2}$~~

b) $\begin{cases} 2x + 3y = 9 \\ 4x - y = 11 \end{cases}$

$$\begin{cases} 2x + 3y = 9 \\ 12x - 3y = 33 \end{cases} \rightarrow \frac{14x}{14} = \frac{42}{14} \quad \boxed{x = 3}$$

$$\begin{cases} 4(3) - y = 11 \\ 12 - y = 11 \end{cases} \quad \boxed{y = 1}$$

6) Solve each system by any method that you like. Be sure to verify your solution by substituting it into the original equations.

a) $\begin{cases} x + y = -2 \\ x - y = 0 \end{cases}$ add the

$$\begin{array}{r} x + y = -2 \\ x - y = 0 \\ \hline 2x = -2 \end{array}$$

$$\boxed{x = -1}$$

$$\begin{array}{r} x + y = -2 \\ -1 + y = -2 \\ \hline y = -1 \end{array}$$

$$\boxed{y = -1}$$

b) $\begin{cases} 2x - 5y = -1 \quad (-1) \\ 4x - 5y = -7 \end{cases}$

$$\begin{array}{r} 2x - 5y = -1 \\ + \quad -2x + 5y = 1 \\ \hline -6 = 0 \end{array}$$

$$\boxed{x = -3}$$

$$\begin{array}{r} 2(-3) - 5y = -1 \\ -6 - 5y = -1 \\ \hline -5y = 5 \\ y = -1 \end{array}$$

$$\boxed{y = -1}$$

c) $\begin{cases} y = 6x - 3 \\ y = -3x + 6 \end{cases}$

$$\begin{array}{r} 6x - 3 = -3x + 6 \\ +3x \quad +3x \\ \hline 9x - 3 = 6 \\ 9x = 9 \\ x = 1 \end{array}$$

$$\boxed{x = 1}$$

$$y = 6x - 3 \quad y = 6(1) - 3 \quad \boxed{y = 3}$$

d) $\begin{cases} 4x - 3y = 1 \quad (2) \\ y + 2x = 3 \quad (3) \end{cases} \Rightarrow$

$$y = 3 - 2x$$

$$4x - 3(3 - 2x) = 1 \Rightarrow 4x - 9 + 6x = 1$$

$$10x - 9 = 1$$

$$\boxed{x = 1}$$

7) Verify whether or not the given ordered pair is a solution to the system. If it is not a solution, explain why not.

a) $(-2, -2)$

$$\begin{cases} 7x - 2y = -18 \\ 3x - 5y = 4 \end{cases}$$

$$7(-2) - 2(-2) = -14$$

No!

b) $(3, 1)$

$$\begin{cases} 3x + 2y = 11 \\ -2x + 5y = 1 \end{cases}$$

$$-2(3) + 5(1) = -1$$

No!

Substitution

$$\textcircled{1} \begin{aligned} y &= 2x + 6 \\ y &= 4x \end{aligned}$$

$$2x + 6 = 4x$$

solve

$$2x + y = 19$$

$$y = \underline{\underline{x - 2}}$$

$$2x + (x - 2) = 19$$

Elimination

$$\begin{array}{r} \textcircled{1} \quad x + y = -2 \\ + \quad x - y = 0 \\ \hline \end{array}$$

$$2x = -2$$

$$\boxed{x = -1}$$

find y

$$\begin{array}{r} \textcircled{2} \quad 2x + 3y = 9 \\ \quad 4x - y = 11 \quad (3) \end{array}$$

$$\begin{array}{r} 2x + 3y = 9 \\ + 12x - 3y = 33 \\ \hline 14x = 42 \end{array}$$

$$\boxed{x = 3}$$

find y